

SEQUENCE LISTING

<110> Blackwell, T. Keith
An, Jae Hyung

<120> SKN-1 GENE AND PROTEINS

<130> 10276-093US1

<140> US 10/560,563

<141> 2005-12-12

<150> PCT/US2004/19046

<151> 2004-06-14

<150> US 60/478,185

<151> 2003-06-13

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<212> PRT

<213> *Caenorhabditis elegans*

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Tyr	Gln	Arg	Gln	Leu	Ile	Arg	Lys	Ile	Arg	Arg	Arg	Gly	Lys	Asn	Lys	50	55	60	
Val	Ala	Ala	Arg	Thr	Cys	Arg	Gln	Arg	Arg	Thr	Asp	Arg	His	Asp	Lys	65	70	75	80
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<212> PRT

<213> *Caenorhabditis elegans*

<400> 2

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Gly	Phe	Phe	Glu	Ser	Phe	Asn	Asn	Asn	Gln	Tyr	Gln	Gln	Lys	His	Gln
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<210> 3

<211> 1602

<212> DNA

<213> *Caenorhabditis elegans*

<400> 3

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<210> 4

<211> 2615

<212> DNA

<213> *Caenorhabditis elegans*

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<211> 23

<212> PRT

<213> *Caenorhabditis elegans*

<400> 5

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<210> 6

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<212> DNA

<213> *Caenorhabditis elegans*

<400> 6

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atactgaaca tgtaccttca aatgttcaat caacaacagg tggatcaaca cggccatcat 180

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<212> PRT

<213> Caenorhabditis elegans

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 35          40          45
Phe Asn Gln Gln Gln Val Asp Gln His Gly His His His Gln His Pro
 50          55          60
Tyr Ala Tyr Ser Gly Val Ser Ser Thr Phe Asp Arg Val Phe Pro Thr
 65          70          75          80
Ser Asn Tyr Ala Tyr Ile Gly Met Gln Asn Asp Ser Leu Gln Ala Val
 85          90          95
Val Ser Asn Gly Gln Ile Asp Tyr Asp His Ser Tyr Gln Ser Thr Gly
100          105          110
Gln Thr Pro Leu Ser Pro Leu Ile Ile Gly Ser Ser Gly Arg Gln Gln
115          120          125
Gln Thr Gln Thr Ser Pro Gly Ser Val Thr Val Thr Ala Thr Ala Thr
130          135          140
Gln Ser Leu Phe Asp Pro Tyr His Ser Gln Arg His Ser Phe Ser Asp
145          150          155          160
Cys Thr Thr Asp Ser Ser Ser Thr Cys Ser Arg Leu Ser Ser Glu Ser
165          170          175
Pro Arg Tyr Thr Ser Glu Ser Ser Thr Gly Thr His Glu Ser Arg Phe
180          185          190
Tyr Gly Lys Leu Ala Pro Ser Ser Gly Ser Arg Tyr Gln Arg Ser Ser
195          200          205
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210          215          220
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225          230          235          240
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245          250          255
Met Ser Leu Ser Glu Leu Gln Gln Val Leu Lys Asn Glu Ser Leu Ser
260          265          270
Glu Tyr Gln Arg Gln Leu Ile Arg Lys Ile Arg Arg Arg Gly Lys Asn
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 <213> *Caenorhabditis elegans*

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 <211> 1872
 <212> DNA
 <213> *Caenorhabditis elegans*

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<210> 10

<211> 623

<212> PRT

<213> *Caenorhabditis elegans*

<400> 10

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 20          25          30
Glu Glu Glu Thr Thr Ser Ile Tyr Gly Val Ser Ser Ile Phe Ile Trp
 35          40          45
Ile Leu Ala Thr Ser Ser Leu Ile Leu Val Ile Ser Ser Pro Ser Ser
 50          55          60
Asn Thr Ser Ile Gln Ser Ser Ser Tyr Asp Arg Ile Thr Thr Lys His
 65          70          75          80
Leu Leu Asp Asn Ile Ser Pro Thr Phe Lys Met Tyr Thr Asp Ser Asn
 85          90          95
Asn Arg Asn Phe Asp Glu Val Asn His Gln His Gln Gln Glu Gln Asp
100          105          110
Phe Asn Gly Gln Ser Lys Tyr Asp Tyr Pro Gln Phe Asn Arg Pro Met
115          120          125
Gly Leu Arg Trp Arg Asp Asp Gln Arg Met Met Glu Tyr Phe Met Ser
130          135          140
Asn Gly Pro Val Glu Thr Val Pro Val Met Pro Ile Leu Thr Glu His
145          150          155          160
Pro Pro Ala Ser Pro Phe Gly Arg Gly Pro Ser Thr Glu Arg Pro Thr
165          170          175
Thr Ser Ser Arg Tyr Glu Tyr Ser Ser Pro Ser Leu Glu Asp Ile Asp
180          185          190
Leu Ile Asp Val Leu Trp Arg Ser Asp Ile Ala Gly Glu Lys Gly Thr
195          200          205
Arg Gln Val Ala Pro Ala Asp Gln Tyr Glu Cys Asp Leu Gln Thr Leu
210          215          220
Thr Glu Lys Ser Thr Val Ala Pro Leu Thr Ala Glu Glu Asn Ala Arg
225          230          235          240

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Tyr Glu Asp Leu Ser Lys Gly Phe Tyr Asn Gly Phe Phe Glu Ser Phe
 245 250 255
 Asn Asn Asn Gln Tyr Gln Gln Lys His Gln Gln Gln Gln Arg Glu Gln
 260 265 270
 Ile Lys Thr Pro Thr Leu Glu His Pro Thr Gln Lys Ala Glu Leu Glu
 275 280 285
 Asp Asp Leu Phe Asp Glu Asp Leu Ala Gln Leu Phe Glu Asp Val Ser
 290 295 300
 Arg Glu Glu Gly Gln Leu Asn Gln Leu Phe Asp Asn Lys Gln Gln His
 305 310 315 320
 Pro Val Ile Asn Asn Val Ser Leu Ser Glu Gly Ile Val Tyr Asn Gln
 325 330 335
 Ala Asn Leu Thr Glu Met Gln Glu Met Arg Asp Ser Cys Asn Gln Val
 340 345 350
 Ser Ile Ser Thr Ile Pro Thr Thr Ser Thr Ala Gln Pro Glu Thr Leu
 355 360 365
 Phe Asn Val Thr Asp Ser Gln Thr Val Glu Gln Trp Leu Pro Thr Glu
 370 375 380
 Val Val Pro Asn Asp Val Phe Pro Thr Ser Asn Tyr Ala Tyr Ile Gly
 385 390 395 400
 Met Gln Asn Asp Ser Leu Gln Ala Val Val Ser Asn Gly Gln Ile Asp
 405 410 415
 Tyr Asp His Ser Tyr Gln Ser Thr Gly Gln Thr Pro Leu Ser Pro Leu
 420 425 430
 Ile Ile Gly Ser Ser Gly Arg Gln Gln Gln Thr Gln Thr Ser Pro Gly
 435 440 445
 Ser Val Thr Val Thr Ala Thr Ala Thr Gln Ser Leu Phe Asp Pro Tyr
 450 455 460
 His Ser Gln Arg His Ser Phe Ser Asp Cys Thr Thr Asp Ser Ser Ser
 465 470 475 480
 Thr Cys Ser Arg Leu Ser Ser Glu Ser Pro Arg Tyr Thr Ser Glu Ser
 485 490 495
 Ser Thr Gly Thr His Glu Ser Arg Phe Tyr Gly Lys Leu Ala Pro Ser
 500 505 510
 Ser Gly Ser Arg Tyr Gln Arg Ser Ser Ser Pro Arg Ser Ser Gln Ser
 515 520 525
 Ser Ile Lys Ile Ala Arg Val Val Pro Leu Ala Ser Gly Gln Arg Lys
 530 535 540
 Arg Gly Arg Gln Ser Lys Asp Glu Gln Leu Ala Ser Asp Asn Glu Leu
 545 550 555 560
 Pro Val Ser Ala Phe Gln Ile Ser Glu Met Ser Leu Ser Glu Leu Gln
 565 570 575
 Gln Val Leu Lys Asn Glu Ser Leu Ser Glu Tyr Gln Arg Gln Leu Ile
 580 585 590
 Arg Lys Ile Arg Arg Arg Gly Lys Asn Lys Val Ala Ala Arg Thr Cys
 595 600 605
 Arg Gln Arg Arg Thr Asp Arg His Asp Lys Met Ser His Tyr Ile
 610 615 620

<210> 11

<211> 23

<212> PRT

<213> Caenorhabditis elegans

<400> 11

Asp Cys Thr Thr Asp Ser Ser Ser Thr Cys Ser Arg Leu Ser Ser Glu

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 Ser Pro Arg Tyr Thr Ser Glu
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<210> 12
 <211> 2549
 <212> DNA
 <213> *Caenorhabditis elegans*

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 ggagtgtcgt ccatattcat ctggatactt gcaacatcat cactgatttt ggtgatcagt 180
 tcaccatcgt ccaacacctc aatccaatca tcgtcatacg atcggatcac gacaaaacat 240
 cttctggaca atatatcacc gacattttaa atgtacacgg acagcaataa taggaacttt 300
 gatgaagtca accatcagca tcaacaagaa caagatttca atggccaatc caaatatgat 360
 tatccacaat tcaaccgtcc aatgggtctc cgttggcgtg atgatcaacg gatgatggag 420
 tatttcatgt cgaatgggtc agtagaaact gttccagtta tgccaatact caccgagcat 480
 ccaccagcat ctccattcgg tagaggacca tctacagaac gtccaaccac atcatctcga 540
 tacgagtaca gttcgccttc tctcgaggat atcgacttga ttgatgtgct atggagaagt 600
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 tatcagcaga aacatcagca acaacaacga gaacaaataa agacaccaac tcttgaacat 840
 ccaactcaaa aagccgaatt ggaagatgat ctgtttgatg aagatcttgc tcagcttttc 900
 gaggatgttt caagagaaga aggacaattg aatcaacttt ttgataataa gcaacaacat 960
 ccagttatca ataattgttc tctgtcggaa ggaattgttt ataatcaggc aaatttgacc 1020
 gagatgcaag agatgcgtga ttccctgcaat caagtttcca tttcaacaat tccaacaaca 1080
 tcgactgctc aaccagagac tttgttcaat gtaaccgatt cacagactgt cgaacagtgg 1140
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 cagcagactc aaacgagccc aggaagcgtc acagtgactg caacagctac tcaatcgttg 1380
 ttcgatccat atcactcaca gagacactcg tttagtgtat gcactactga ttcgtcatca 1440
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 cagcagctc gtttctacgg aaagtgggtt ccatccagtg gatcacgcta ccaacgatca 1560
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 ggacaacgga agcgtggagc tcaatccaag gatgagcagc tcgccagtga caacgagctt 1680
 ccagtgtcgg cgttccagat ttccggagat tcattaagcg agttgcaaca agtgttgaag 1740
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 aacaaggttg ctgcccgcac ttgccgtcaa agacgcacgg atcgtcacga caagatgtcc 1860
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 tcatttcatt ttgatctact ctttcctccc ttccgattct ttgatttccc agtgaaatac 2040
 ctcacccact tcaatcccca caaagtgagc aaccctatc ttgcaacagt tttatcatct 2100
 cttcatcata cccagtttga taatttatta tctgatcccc atccccctgt cgctctcat 2160
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<210> 13
 <211> 420

<212> PRT

<213> Homo sapiens

<400> 13

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			20					25					30		
Asp	Gly	Ser	Lys	Val	Thr	Thr	Val	Val	Ala	Thr	Pro	Gly	Gln	Gly	Pro
		35					40					45			
Asp	Arg	Pro	Gln	Glu	Val	Ser	Tyr	Thr	Asp	Thr	Lys	Val	Ile	Gly	Asn
	50					55					60				
Gly	Ser	Phe	Gly	Val	Val	Tyr	Gln	Ala	Lys	Leu	Cys	Asp	Ser	Gly	Glu
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Leu	Val	Ala	Ile	Lys	Lys	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg
				85					90					95	
Glu	Leu	Gln	Ile	Met	Arg	Lys	Leu	Asp	His	Cys	Asn	Ile	Val	Arg	Leu
			100				105					110			
Arg	Tyr	Phe	Phe	Tyr	Ser	Ser	Gly	Glu	Lys	Lys	Asp	Glu	Val	Tyr	Leu
		115					120					125			
Asn	Leu	Val	Leu	Asp	Tyr	Val	Pro	Glu	Thr	Val	Tyr	Arg	Val	Ala	Arg
	130					135					140				
His	Tyr	Ser	Arg	Ala	Lys	Gln	Thr	Leu	Pro	Val	Ile	Tyr	Val	Lys	Leu
145					150					155					160
Tyr	Met	Tyr	Gln	Leu	Phe	Arg	Ser	Leu	Ala	Tyr	Ile	His	Ser	Phe	Gly
				165					170					175	
Ile	Cys	His	Arg	Asp	Ile	Lys	Pro	Gln	Asn	Leu	Leu	Leu	Asp	Pro	Asp
			180					185					190		
Thr	Ala	Val	Leu	Lys	Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys	Gln	Leu	Val
		195					200					205			
Arg	Gly	Glu	Pro	Asn	Val	Ser	Tyr	Ile	Cys	Ser	Arg	Tyr	Tyr	Arg	Ala
	210					215					220				
Pro	Glu	Leu	Ile	Phe	Gly	Ala	Thr	Asp	Tyr	Thr	Ser	Ser	Ile	Asp	Val
225					230					235					240
Trp	Ser	Ala	Gly	Cys	Val	Leu	Ala	Glu	Leu	Leu	Leu	Gly	Gln	Pro	Ile
				245				250						255	
Phe	Pro	Gly	Asp	Ser	Gly	Val	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val
			260					265					270		
Leu	Gly	Thr	Pro	Thr	Arg	Glu	Gln	Ile	Arg	Glu	Met	Asn	Pro	Asn	Tyr
		275					280					285			
Thr	Glu	Phe	Lys	Phe	Pro	Gln	Ile	Lys	Ala	His	Pro	Trp	Thr	Lys	Val
	290					295					300				
Phe	Arg	Pro	Arg	Thr	Pro	Pro	Glu	Ala	Ile	Ala	Leu	Cys	Ser	Arg	Leu
305					310					315					320
Leu	Glu	Tyr	Thr	Pro	Thr	Ala	Arg	Leu	Thr	Pro	Leu	Glu	Ala	Cys	Ala
				325					330					335	
His	Ser	Phe	Phe	Asp	Glu	Leu	Arg	Asp	Pro	Asn	Val	Lys	Leu	Pro	Asn
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Gly	Arg	Asp	Thr	Pro	Ala	Leu	Phe	Asn	Phe	Thr	Thr	Gln	Glu	Leu	Ser

420

<210> 14
 <211> 483
 <212> PRT
 <213> Homo sapiens

<400> 14

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			20					25					30		
Gly	Gly	Gly	Pro	Gly	Gly	Ser	Ala	Ser	Gly	Pro	Gly	Gly	Thr	Gly	Gly
		35					40					45			
Gly	Lys	Ala	Ser	Val	Gly	Ala	Met	Gly	Gly	Gly	Val	Gly	Ala	Ser	Ser
	50					55					60				
Ser	Gly	Gly	Gly	Pro	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Pro
65					70				75						80
Gly	Ala	Gly	Thr	Ser	Phe	Pro	Pro	Pro	Gly	Val	Lys	Leu	Gly	Arg	Asp
				85					90					95	
Ser	Gly	Lys	Val	Thr	Thr	Val	Val	Ala	Thr	Leu	Gly	Gln	Gly	Pro	Glu
			100					105					110		
Arg	Ser	Gln	Glu	Val	Ala	Tyr	Thr	Asp	Ile	Lys	Val	Ile	Gly	Asn	Gly
		115					120					125			
Ser	Phe	Gly	Val	Val	Tyr	Gln	Ala	Arg	Leu	Ala	Glu	Thr	Arg	Glu	Leu
	130					135					140				
Val	Ala	Ile	Lys	Lys	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg	Glu
145					150				155						160
Leu	Gln	Ile	Met	Arg	Lys	Leu	Asp	His	Cys	Asn	Ile	Val	Arg	Leu	Arg
				165					170					175	
Tyr	Phe	Phe	Tyr	Ser	Ser	Gly	Glu	Lys	Lys	Asp	Glu	Leu	Tyr	Leu	Asn
			180					185					190		
Leu	Val	Leu	Glu	Tyr	Val	Pro	Glu	Thr	Val	Tyr	Arg	Val	Ala	Arg	His
		195					200					205			
Phe	Thr	Lys	Ala	Lys	Leu	Thr	Ile	Pro	Ile	Leu	Tyr	Val	Lys	Val	Tyr
	210					215					220				
Met	Tyr	Gln	Leu	Phe	Arg	Ser	Leu	Ala	Tyr	Ile	His	Ser	Gln	Gly	Val
225					230					235					240
Cys	His	Arg	Asp	Ile	Lys	Pro	Gln	Asn	Leu	Leu	Val	Asp	Pro	Asp	Thr
				245					250					255	
Ala	Val	Leu	Lys	Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys	Gln	Leu	Val	Arg
			260					265					270		
Gly	Glu	Pro	Asn	Val	Ser	Tyr	Ile	Cys	Ser	Arg	Tyr	Tyr	Arg	Ala	Pro
		275					280					285			
Glu	Leu	Ile	Phe	Gly	Ala	Thr	Asp	Tyr	Thr	Ser	Ser	Ile	Asp	Val	Trp
	290					295					300				
Ser	Ala	Gly	Cys	Val	Leu	Ala	Glu	Leu	Leu	Leu	Gly	Gln	Pro	Ile	Phe
305					310					315					320
Pro	Gly	Asp	Ser	Gly	Val	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val	Leu
				325					330					335	
Gly	Thr	Pro	Thr	Arg	Glu	Gln	Ile	Arg	Glu	Met	Asn	Pro	Asn	Tyr	Thr
			340					345					350		
Glu	Phe	Lys	Phe	Pro	Gln	Ile	Lys	Ala	His	Pro	Trp	Thr	Lys	Val	Phe
		355					360					365			
Lys	Ser	Arg	Thr	Pro	Pro	Glu	Ala	Ile	Ala	Leu	Cys	Ser	Ser	Leu	Leu
	370					375					380				

Glu Tyr Thr Pro Ser Ser Arg Leu Ser Pro Leu Glu Ala Cys Ala His
 385 390 395 400
 Ser Phe Phe Asp Glu Leu Arg Cys Leu Gly Thr Gln Leu Pro Asn Asn
 405 410 415
 Arg Pro Leu Pro Pro Leu Phe Asn Phe Ser Ala Gly Glu Leu Ser Ile
 420 425 430
 Gln Pro Ser Leu Asn Ala Ile Leu Ile Pro Pro His Leu Arg Ser Pro
 435 440 445
 Ala Gly Thr Thr Thr Leu Thr Pro Ser Ser Gln Ala Leu Thr Glu Thr
 450 455 460
 Pro Thr Ser Ser Asp Trp Gln Ser Thr Asp Ala Thr Pro Thr Leu Thr
 465 470 475 480
 Asn Ser Ser

<210> 15

<211> 420

<212> PRT

<213> Mus musculus

<400> 15

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 Val Gln Gln Pro Ser Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys
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 Asp Gly Ser Lys Val Thr Thr Val Ala Thr Pro Gly Gln Gly Pro
 35 40 45
 Asp Arg Pro Gln Glu Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn
 50 55 60
 Gly Ser Phe Gly Val Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu
 65 70 75 80
 Leu Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg
 85 90 95
 Glu Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu
 100 105 110
 Arg Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu
 115 120 125
 Asn Leu Val Leu Asp Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg
 130 135 140
 His Tyr Ser Arg Ala Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu
 145 150 155 160
 Tyr Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly
 165 170 175
 Ile Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp
 180 185 190
 Thr Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val
 195 200 205
 Arg Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala
 210 215 220
 Pro Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val
 225 230 235 240
 Trp Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile
 245 250 255
 Phe Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val
 260 265 270
 Leu Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr

275	280	285
Thr Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val		
290	295	300
Phe Arg Pro Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu		
305	310	315
Leu Glu Tyr Thr Pro Thr Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala		
	325	330
His Ser Phe Phe Asp Glu Leu Arg Asp Pro Asn Val Lys Leu Pro Asn		
	340	345
Gly Arg Asp Thr Pro Ala Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser		
	355	360
Ser Asn Pro Pro Leu Ala Thr Ile Leu Ile Pro Pro His Ala Arg Ile		
	370	375
Gln Ala Ala Ala Ser Pro Pro Ala Asn Ala Thr Ala Ala Ser Asp Thr		
385	390	395
Asn Ala Gly Asp Arg Gly Gln Thr Asn Asn Ala Ala Ser Ala Ser Ala		
	405	410
Ser Asn Ser Thr		415
420		

<210> 16

<211> 447

<212> PRT

<213> Mus musculus

<220>

<221> VARIANT

<222> 227, 308

<223> Xaa = Any Amino Acid

<400> 16

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Asp Met Phe Glu Arg Ile Ala Ser Glu Ala Ser Phe Leu Ala Arg Gln	
	35
Ala Arg Asn Ser Thr Ile Asn Ser Arg Glu Ile Gln Thr Ala Ile Arg	
	50
Leu Leu Leu Pro Gly Glu Leu Cys Arg Arg Gly Thr Gly Cys Gly Lys	
65	70
Ala Ser Val Trp Ala Met Gly Gly Gly Val Gly Ala Ser Ser Ser Gly	
	85
Val Gly Gly Gly Ser Gly Gly Pro Gly Ser Thr Ser Phe Leu Gln Pro	
	100
Gly Val Lys Leu Gly His Asp Ser Arg Lys Val Thr Thr Val Val Ala	
	115
Thr Val Gly Gln Asp Pro Glu Arg Ser Gln Glu Val Ala Cys Thr Asp	
	130
Ile Lys Val Ile Gly Asn Gly Ser Phe Gly Val Val Tyr Gln Glu Trp	
145	150
Leu Ala Asp Thr Arg Glu Leu Val Ala Ile Lys Lys Val Leu Gln Asp	
	165
Lys Arg Phe Lys Tyr Arg Glu Leu Gln Ile Met Cys Lys Leu Asp His	
	180
Cys Asn Ile Val Arg Leu Gln Tyr Phe Phe Tyr Ser Ser Gly Glu Lys	
	185
	190

		195					200					205						
Lys	Asp	Asp	Leu	Tyr	Leu	Asn	Leu	Val	Leu	Glu	Tyr	Val	Pro	Glu	Thr			
	210					215					220							
Val	Tyr	Xaa	Val	Ala	Arg	His	Phe	Thr	Lys	Ala	Lys	Leu	Ile	Ile	Pro			
225					230					235					240			
Ile	Ile	Tyr	Val	Lys	Val	Tyr	Met	Tyr	Gln	Leu	Phe	Arg	Ser	Leu	Ala			
				245					250					255				
Tyr	Ile	His	Ser	Gln	Gly	Val	Cys	His	Arg	Asp	Ile	Asn	Leu	Leu	Val			
			260					265					270					
Asp	Pro	Asp	Thr	Ala	Ile	Leu	Lys	Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys			
		275					280					285						
Gln	Leu	Val	Leu	Gly	Thr	Thr	Val	Ala	Pro	Glu	Leu	Tyr	Thr	Ser	Ser			
	290					295					300							
Ile	Asp	Val	Xaa	Ser	Ala	Gly	Cys	Val	Leu	Ala	Glu	Leu	Leu	Leu	Ser			
305					310					315					320			
Gln	Pro	Ile	Phe	Pro	Gly	Asp	Asn	Gly	Val	Asp	Gln	Leu	Val	Glu	Ile			
				325					330					335				
Ile	Lys	Val	Leu	Gly	Thr	Pro	Thr	Arg	Glu	Gln	Ile	Arg	Glu	Met	Asn			
			340					345					350					
Pro	Lys	Tyr	Thr	Glu	Phe	Lys	Phe	Pro	Gln	Ile	Lys	Ala	His	Pro	Trp			
		355					360					365						
Thr	Lys	Val	Phe	Lys	Ser	Arg	Thr	Ala	Pro	Arg	Pro	Leu	His	Ser	Ala			
	370					375					380							
Leu	Ala	Cys	Trp	Ser	Thr	His	His	Thr	Gln	Gly	Ser	Pro	His	Leu	Arg			
385					390					395					400			
Leu	Val	Pro	Thr	Ala	Ser	Leu	Met	Asn	Cys	Gly	Val	Ser	Gly	Pro	Ala			
				405					410					415				
Pro	Gln	Arg	Pro	Pro	Thr	Ser	Pro	Cys	Ser	Thr	Ser	Val	Leu	Val	Ile			
			420					425					430					
Cys	Pro	Ser	Asn	His	Leu	Ser	Met	Pro	Phe	Ser	Ser	Leu	Leu	Thr				
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<210> 17
<211> 362
<212> PRT
<213> Caenorhabditis elegans
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<400> 17

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Thr	Met	Val	Val	Ala	Ser	Val	Ala	Thr	Asp	Gly	Val	Asp	Gln	Gln	Val
			20					25					30		
Glu	Ile	Ser	Tyr	Tyr	Asp	Gln	Lys	Val	Ile	Gly	Asn	Gly	Ser	Phe	Gly
		35					40					45			
Val	Val	Phe	Leu	Ala	Lys	Leu	Ser	Thr	Thr	Asn	Glu	Met	Val	Ala	Ile
	50					55				60					
Lys	Lys	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg	Glu	Leu	Gln	Ile
65					70					75				80	
Met	Arg	Lys	Leu	Asn	His	Pro	Asn	Ile	Val	Lys	Leu	Lys	Tyr	Phe	Phe
				85					90					95	
Tyr	Ser	Ser	Gly	Glu	Lys	Lys	Asp	Glu	Leu	Tyr	Leu	Asn	Leu	Ile	Leu
			100					105					110		
Glu	Tyr	Val	Pro	Glu	Thr	Val	Tyr	Arg	Val	Ala	Arg	His	Tyr	Ser	Lys
		115					120					125			
Gln	Arg	Gln	Gln	Ile	Pro	Met	Ile	Tyr	Val	Lys	Leu	Tyr	Met	Tyr	Gln
	130					135					140				

Leu	Leu	Arg	Ser	Leu	Ala	Tyr	Ile	His	Ser	Ile	Gly	Ile	Cys	His	Arg
145					150					155					160
Asp	Ile	Lys	Pro	Gln	Asn	Leu	Leu	Ile	Asp	Pro	Glu	Ser	Gly	Val	Leu
				165					170						175
Lys	Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys	Tyr	Leu	Val	Arg	Asn	Glu	Pro
			180					185					190		
Asn	Val	Ser	Tyr	Ile	Cys	Ser	Arg	Tyr	Tyr	Arg	Ala	Pro	Glu	Leu	Ile
		195					200					205			
Phe	Gly	Ala	Thr	Asn	Tyr	Thr	Asn	Ser	Ile	Asp	Val	Trp	Ser	Ala	Gly
	210					215					220				
Thr	Val	Met	Ala	Glu	Leu	Leu	Gly	Gln	Pro	Ile	Phe	Pro	Gly	Asp	
225					230				235						240
Ser	Gly	Val	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val	Leu	Gly	Thr	Pro
			245					250						255	
Thr	Arg	Glu	Gln	Ile	Gln	Ser	Met	Asn	Pro	Asn	Tyr	Lys	Glu	Phe	Lys
			260					265					270		
Phe	Pro	Gln	Ile	Lys	Ala	His	Pro	Trp	Asn	Lys	Val	Phe	Arg	Val	His
		275					280					285			
Thr	Pro	Ala	Glu	Ala	Ile	Asp	Leu	Ile	Ser	Lys	Ile	Ile	Glu	Tyr	Thr
	290					295					300				
Pro	Thr	Ser	Arg	Pro	Thr	Pro	Gln	Ala	Ala	Cys	Gln	His	Ala	Phe	Phe
305					310					315					320
Asp	Glu	Leu	Arg	Asn	Pro	Asp	Ala	Arg	Leu	Pro	Ser	Gly	Arg	Pro	Leu
			325						330					335	
Pro	Thr	Leu	Glu	Met	Asp	Gly	Pro	Met	Gly	Thr	Gly	Glu	Ile	Ser	Pro
		340						345				350			
Thr	Ser	Gly	Asp	Val	Ala	Gly	Pro	Ser	Ala						
		355					360								

<210> 18
 <211> 586
 <212> DNA
 <213> Caenorhabditis elegans

<400> 18
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 aaaataaata gctagcgcaa tactcgtgca cgagatgtgc gccagcagct ccttgacgca 180
 aaacgtgacg ttttagacca aaatgatttt tgctctttga gttcttttgtt ttcgggagca 240
 aatttcatgc caatcccttt ctttttttca aattttcctg tttaaattcat gtaataacta 300
 ttattcatgt caattacaac aaataagcat ccaagatttt atcataaact cgttcaaacc 360
 tccttttacc actcgaaaag caatatctcc gacttccttc aaagagaaat gatgacaaaa 420
 catagaaaacc tcacgttata cgttttgtca tcacgatttc agtgctcact tttctcattt 480
 cattctcgct taatttcatt tttgtcactc tcgcgtcatg ttttgcatth ttcgaaagca 540
 tttatttaaa actgaaaaaa taattcgtaa tttttcaaga atggct 586

<210> 19
 <211> 1584
 <212> DNA
 <213> Caenorhabditis elegans

<400> 19
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 aagatgataa gctcaacgag ctaccgctg atcttcacga ttggggtcat gctaattggc 120
 ttgtcatgcg tctatcaacc gacaagttga gcagcgaagt ttgtcaaact actccattaa 180
 cacttcttcc atctccattc ccgaaaaatg tttttgaaga agcagttcat attcagaacc 240

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ttttcgcaag tctttatcac ttcatagctt atgaatttga ttttctaatac gatattcata 300
aaaaatgtcgt gaaaactgat gatttcacac ggaatatggt tgagatcttg aagaaagtca 360
aagcccaagg actcaagcaa ccagtcactc tcgcgattca acgatctgat tatatgtgtc 420
ataaggatca atattcagcg gaatatggac tgaaacaaat tgaaataaac aatatcgcct 480
cgtcaatggg agcacatgct ctacggctca ccgaatggca tatcagagtt cttaaagcgt 540
tgaacatttc cgatgacgct attcaaagag caattccaga aaacaagcca attccaatga 600
tcgctgaagc tttattcaag gcctgggtccc acttttcgaa cccagcagct gtgggttcttg 660
tcgttgtaga aaacgtcaat caaaatcaga ttgatcaacg ccacgtggaa tatgaacttg 720
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aattatcatt gaatgataga agcgatttga tgattgatgg gcgtcaagta gcaattgttt 840
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agcgtatgga actttccacc gctatcaaaa ctccatggat cgggctacag gtggcaaata 960
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gagaacttcc ggaagaagag cgtggagctt tcattttgat ggagaaactg aaaccgatga 1260
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caacaaaaat gctgtgatat gaaaccattt gctattttaga tctttttgtg tttgtaaatt 1560
taatcattgt aattttattga atgt 1584

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<210> 20

<211> 490

<212> PRT

<213> *Caenorhabditis elegans*

<400> 20

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Pro Leu Glu Asp Asp Lys Leu Asn Glu Leu Thr Ala Asp Leu His Asp
          20          25          30
Trp Ala His Ala Asn Gly Leu Val Met Arg Leu Ser Thr Asp Lys Leu
          35          40          45
Ser Ser Glu Val Cys Gln Thr Thr Pro Leu Thr Leu Leu Pro Ser Pro
          50          55          60
Phe Pro Lys Asn Val Phe Glu Glu Ala Val His Ile Gln Asn Leu Phe
65          70          75          80
Ala Ser Leu Tyr His Phe Ile Ala Tyr Glu Phe Asp Phe Leu Ile Asp
          85          90          95
Ile His Lys Asn Val Val Lys Thr Asp Asp Phe Thr Arg Asn Met Val
          100          105          110
Glu Ile Leu Lys Lys Val Lys Ala Gln Gly Leu Lys Gln Pro Val Thr
          115          120          125
Leu Ala Ile Gln Arg Ser Asp Tyr Met Cys His Lys Asp Gln Tyr Ser
          130          135          140
Ala Glu Tyr Gly Leu Lys Gln Ile Glu Ile Asn Asn Ile Ala Ser Ser
145          150          155          160
Met Gly Ala His Ala Leu Arg Leu Thr Glu Trp His Ile Arg Val Leu
          165          170          175
Lys Ala Leu Asn Ile Ser Asp Asp Val Ile Gln Arg Ala Ile Pro Glu
          180          185          190
Asn Lys Pro Ile Pro Met Ile Ala Glu Ala Leu Phe Lys Ala Trp Ser
          195          200          205
His Phe Ser Asn Pro Ala Ala Val Val Leu Val Val Val Glu Asn Val

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210	215	220
Asn Gln Asn Gln Ile Asp Gln Arg His Val Glu Tyr Glu Leu Glu Lys		
225	230	235
Leu Gly Val Pro Met Thr Cys Ile Ile Arg Arg Asn Leu Thr Gln Cys		240
	245	250
Tyr Glu Gln Leu Ser Leu Asn Asp Arg Ser Asp Leu Met Ile Asp Gly		255
	260	265
Arg Gln Val Ala Ile Val Tyr Phe Arg Ala Gly Tyr Ser Pro Asp His		270
	275	280
Tyr Pro Ser Thr Lys Glu Trp Glu Ala Arg Glu Arg Met Glu Leu Ser		285
	290	295
Thr Ala Ile Lys Thr Pro Trp Ile Gly Leu Gln Val Ala Asn Thr Lys		300
305	310	315
Lys Thr Gln Gln Val Leu Ser Glu Asp Gly Val Leu Glu Arg Phe Ile		320
	325	330
Gly Lys Pro Arg Glu Ala Arg Asp Ile Arg Ala Ser Phe Ala Gly Met		335
	340	345
Trp Ala Leu Glu Asn Thr Asp Glu Val Thr Met Lys Val Val Ala Gly		350
	355	360
Ala Gln Lys His Pro Glu Ala Phe Val Leu Lys Pro Gln Thr Glu Gly		365
	370	375
Gly Ala Ala Leu His Thr Gly Asp Glu Met Val Gln Met Leu Arg Glu		380
385	390	395
Leu Pro Glu Glu Glu Arg Gly Ala Phe Ile Leu Met Glu Lys Leu Lys		400
	405	410
Pro Met Ile Ile Glu Asn Tyr Leu Val Leu Ala Lys Lys Pro Ile Thr		415
	420	425
Phe Ala Lys Ala Val Ser Glu Leu Gly Val Tyr Gly Tyr Ala Phe Gly		430
	435	440
Arg Lys Asp Ala Pro Glu Leu Lys Thr Ala Gly His Leu Leu Arg Thr		445
	450	455
Lys Pro Glu Ser Thr Ala Met Gly Gly Val Ala Ala Gly His Ala Val		460
465	470	475
Val Asp Thr Pro Phe Leu Tyr Glu Phe Ile		480
	485	490

<210> 21

<211> 794

<212> DNA

<213> Caenorhabditis elegans

<400> 21

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agcacggctt gacgctcggt tgccgcgcgc tcattcgatt tgtgtgagtg cccagtgagg 180
cgcgtttgct aaggctaact gtgtagtcct ctcggacaag atctgtgaac attgaaatga 240
aacacttggg ttcaataaaa tcacaagaaa atgatgacaa ttttgtttgc gaccgaaaaa 300
aaattataaa aattgaatat tggttatcat cgtttcaatc tttgttttgt attaaaggca 360
cagctgctaa aaattgtttt ttttttttca attttgctaa aagaaaatca attttctgat 420
tttttgttga gttcccgtgc aaatcaatgt cctagctttt taaaattggt ttttgttatg 480
taattctaata caaattttgt cgaattttca gagattttct gctaaaacac taaaaatagt 540
ctaaaagtcg ataatttgat aaacatttac tcaaaccttt tacggaaaaa tgaaacaaaa 600
gttgcaaaaaa tatagtaatt tcgcaatttt ctgaacgcgt acttaaagggt acacggtttg 660
attcggattg gtcccgccac aaagtgttac cataacattt ttctcgctgc gagacccatc 720
cgaataaatc cgtgcgccta atcagtgcga gtacgcattt catattactg ataagtcca 780
tttttagaac aatg

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<210> 22
 <211> 1017
 <212> DNA
 <213> *Caenorhabditis elegans*

<400> 22
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 gttcgggaatt acgctgccgg tgtcaatcca gttgacacat atattcgtgc tggtcagtat 180
 ggaaaactac caaatcttcc atatgtacca ggaaaagatg gagccggatt cgtcgaactt 240
 gtgggagaaa gcgttaaaaa tgtgaaagtc ggcgatcgag tctgggtatgg atcagaagcg 300
 gacagtacag cagagtatgt tgcggtgaat cgaccattcg agttgccgga aggagtttcg 360
 tttgaggaag gagcttctct cggagtgcct tatcttaccg cttatcgtgc attgtttcat 420
 cttgctggtg caaagactgg cgacgttata cttgtacacg gagcatctgg tggagtggga 480
 agtgcactga tgcagctggc tgcctggagg aacattgaag ctgttggcac tgctggatct 540
 gctgatggga tccggttcgt gaagagtcctt ggtgcacgga atgtctataa tcattcggat 600
 aagcaatatg tgtcgaaaat gaaaaatgat tatccaggag gcttcaacca cattttcgaa 660
 atggctgctc acacaaatct gaacacggac ctcggattgc tggctccacg tggtagagtt 720
 gcagtaattg gaaatcgcg cgagaccacg atcaacgcaa gacaacttat ggttacagaa 780
 ggagctgttt acggtgtagc attgggaatg tcttccgagg ctgagctctt ggactttggc 840
 atcaacattg tctcattctt gaaggaaacc gagtttcgtc cacttataaa caaattgtat 900
 cgtctcgagc aattaggact ggctcatgag gaaattatga acaacaaggg agcgaaagga 960
 aatctttagt tgcaaatcga acattaattc attatttttaa cagccattt aaaggaa 1017

<210> 23
 <211> 328
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 23
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 Arg Leu Glu Lys Asn Gln Val Leu Val Arg Asn Tyr Ala Ala Gly Val
 35 40 45
 Asn Pro Val Asp Thr Tyr Ile Arg Ala Gly Gln Tyr Gly Lys Leu Pro
 50 55 60
 Asn Leu Pro Tyr Val Pro Gly Lys Asp Gly Ala Gly Phe Val Glu Leu
 65 70 75 80
 Val Gly Glu Ser Val Lys Asn Val Lys Val Gly Asp Arg Val Trp Tyr
 85 90 95
 Gly Ser Glu Ala Asp Ser Thr Ala Glu Tyr Val Ala Val Asn Arg Pro
 100 105 110
 Phe Glu Leu Pro Glu Gly Val Ser Phe Glu Glu Gly Ala Ser Leu Gly
 115 120 125
 Val Pro Tyr Leu Thr Ala Tyr Arg Ala Leu Phe His Leu Ala Gly Ala
 130 135 140
 Lys Thr Gly Asp Val Ile Leu Val His Gly Ala Ser Gly Gly Val Gly
 145 150 155 160
 Ser Ala Leu Met Gln Leu Ala Ala Trp Arg Asn Ile Glu Ala Val Gly
 165 170 175
 Thr Ala Gly Ser Ala Asp Gly Ile Arg Phe Val Lys Ser Leu Gly Ala
 180 185 190
 Arg Asn Val Tyr Asn His Ser Asp Lys Gln Tyr Val Ser Lys Met Lys
 195 200 205

Asn	Asp	Tyr	Pro	Gly	Gly	Phe	Asn	His	Ile	Phe	Glu	Met	Ala	Ala	His
210						215					220				
Thr	Asn	Leu	Asn	Thr	Asp	Leu	Gly	Leu	Leu	Ala	Pro	Arg	Gly	Arg	Val
225					230					235					240
Ala	Val	Ile	Gly	Asn	Arg	Ala	Glu	Thr	Thr	Ile	Asn	Ala	Arg	Gln	Leu
				245						250				255	
Met	Val	Thr	Glu	Gly	Ala	Val	Tyr	Gly	Val	Ala	Leu	Gly	Met	Ser	Ser
			260					265					270		
Glu	Ala	Glu	Leu	Leu	Asp	Phe	Gly	Ile	Asn	Ile	Val	Ser	Phe	Leu	Lys
		275					280					285			
Glu	Thr	Glu	Phe	Arg	Pro	Leu	Ile	Asn	Lys	Leu	Tyr	Arg	Leu	Glu	Gln
	290					295					300				
Leu	Gly	Leu	Ala	His	Glu	Glu	Ile	Met	Asn	Asn	Lys	Gly	Ala	Lys	Gly
305					310				315						320
Asn	Leu	Val	Val	Gln	Ile	Glu	His								
				325											

<210> 24

<211> 1234

<212> DNA

<213> *Caenorhabditis elegans*

<400> 24

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taaccatgga cattccagaa gtctatagta cacgcgatcc taccgtaccc ttcagtattt 180
ctatcagatt gatagctttc ggtagtcagg tacagcctaa aaaattcctg cttgcctttt 240
tgcctacatg tctgcctacc ttcagtcata atgcctacat aatgattttt tccaattgaa 300
acttgacagc agaaattcaa atggcaaaaa gaaacaaaca ccgaaacatt aatcacattt 360
cttttcatat cagttttcct gtcaaagcac atttctggag tctgtgtgta tttttttgtg 420
tctttatgtg atcgggtgtt tgaaatttgt agttgatgtt gataacatac ttttttttga 480
aacaaaaagt gattgattag gcttgaattc agagatatgt tcgtgatact ttgcgattct 540
cgagccaaaa acacgggtatc cggctcgcac acgacaactt tttcgcaaaa tacaagctga 600
tgtgcgcctt gaaagagtac tgtaatttca acctttcgtt gttgcggaat tttcatagtt 660
tctcgttcaa aatatatgta tttattaaac aaaaaactaa aacaaaacaa ttgagaacac 720
ataaattgtg aaaaatcaat gagaccacag caaaaaattt tgtatctaca gtactcttta 780
aaggcgcaca tccgttctta ttttcagcaa aaatgtcgtt tgcgaccggg gtaccgtatt 840
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cacaatttca gggctccgcc catttcgttg tttgtagcct tcccaccct acgtttttga 1080
tgacaattgt gagagaagtg agaggttcag acacaaaaag cgacgtggtc gaatgagtat 1140
aaatagagag tgaagtttcc aatttcctc acaattgttt gtttgcaatc cactttccaa 1200
aaaaacacaa cttcaatcaa aaatcattat gggt 1234

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<210> 25

<211> 664

<212> DNA

<213> *Caenorhabditis elegans*

<400> 25

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gcattgaaag aaacctgcgc tgctccattc ggacaacttc cattcctcga agtcgacggg 180
aagaagcttg ctcaatccca cgcgattgct cgtttcttgg ctctgtgagtt caagctcaac 240
ggaaaaaccg cctgggaaga ggctcaagtg aactctcttg ccgatcaata caaggattat 300

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tcaagtgagg ctcgtccata tttctacgct gtcatgggat tcggtccagg agacgttgaa 360
actttgaaga aagacatctt ccttccagca tttgaaaagt tctacggatt cttgggtcaac 420
ttcttgaagg cttcgggatc cggattcctt gtcggagact ctttgacctg gattgacttg 480
gctattgccc aacattcagc tgatttgatt gccaaaggag gtgatttcag caagttccca 540
gagctcaagg ctcatgccga gaagatccag gcgattccac aaatcaagaa atggatcgag 600
acccgtccag tcacaccatt ctaaatagct gtataaaaatc tgcaataaaa tatttttttt 660
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<210> 26

<211> 207

<212> PRT

<213> *Caenorhabditis elegans*

<400> 26

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Met Val Ser Tyr Lys Leu Thr Tyr Phe Asn Gly Arg Gly Ala Gly Glu
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Val Ser Arg Gln Ile Phe Ala Tyr Ala Gly Gln Gln Tyr Glu Asp Asn
          20          25          30
Arg Val Thr Gln Glu Gln Trp Pro Ala Leu Lys Glu Thr Cys Ala Ala
          35          40          45
Pro Phe Gly Gln Leu Pro Phe Leu Glu Val Asp Gly Lys Lys Leu Ala
          50          55          60
Gln Ser His Ala Ile Ala Arg Phe Leu Ala Arg Glu Phe Lys Leu Asn
65          70          75          80
Gly Lys Thr Ala Trp Glu Glu Ala Gln Val Asn Ser Leu Ala Asp Gln
          85          90          95
Tyr Lys Asp Tyr Ser Ser Glu Ala Arg Pro Tyr Phe Tyr Ala Val Met
          100          105          110
Gly Phe Gly Pro Gly Asp Val Glu Thr Leu Lys Lys Asp Ile Phe Leu
          115          120          125
Pro Ala Phe Glu Lys Phe Tyr Gly Phe Leu Val Asn Phe Leu Lys Ala
          130          135          140
Ser Gly Ser Gly Phe Leu Val Gly Asp Ser Leu Thr Trp Ile Asp Leu
145          150          155          160
Ala Ile Ala Gln His Ser Ala Asp Leu Ile Ala Lys Gly Gly Asp Phe
          165          170          175
Ser Lys Phe Pro Glu Leu Lys Ala His Ala Glu Lys Ile Gln Ala Ile
          180          185          190
Pro Gln Ile Lys Lys Trp Ile Glu Thr Arg Pro Val Thr Pro Phe
          195          200          205

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<210> 27

<211> 404

<212> DNA

<213> *Caenorhabditis elegans*

<400> 27

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atttgtttga aacactgcaa agaatttcga attttgatga taattttaaa tgccattatc 180
agttttaata cgccactcta gtctttgatt ctttgcacac acacacacac acacacacac 240
acacacacac tcacaaacac gcctgaaatt tcgcaatatg ctgatttaac gagaaaacat 300
ttgatgacaa taaacttggc gtattaatat aaaagggaaa attcaattca gattctcaac 360
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<210> 28

<211> 630
 <212> DNA
 <213> *Caenorhabditis elegans*

<400> 28
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 aagttcaaaag cggccggaaa aaccccatat aaccagcttc caatgctcga ggtagatggc 180
 aaaccactcg ctacgtccca cgcgatggct cgttatcttg ctcgggaatt cgggttcaac 240
 ggaaagagca gatgggaaga agctcaagtc aactccttgg ccgaccagta caaagactat 300
 tacgcggagg ctctgtccata cctcgtctgt aagcttgggt acacagaagg agacgcggag 360
 gctctttaca caagcgtcta tcttccagtt ttcaagaaac actatggatt ctttgtcaat 420
 gctttgaagg ccagcgggtc aggattcctt gttggaaaatt ccttgacttt tattgatttg 480
 cttgttgctc agcattcagc tgatttgctg ggacgtgaaa agtcggatct tttcaatgat 540
 gtcccagaga tgaaggcaca ttccgaaaaa gttcagtcaa ttcctcagat caagaaatgg 600
 attgagactc gtccagcgag tgactggtaa 630

<210> 29
 <211> 209
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 29
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 Leu Cys Arg Gln Ile Phe Ala Ala Ala Glu Gln Lys Tyr Glu Asp Asn
 20 25 30
 Arg Leu Thr Asp Glu Glu Trp Glu Lys Phe Lys Ala Ala Gly Lys Thr
 35 40 45
 Pro Tyr Asn Gln Leu Pro Met Leu Glu Val Asp Gly Lys Pro Leu Ala
 50 55 60
 Gln Ser His Ala Met Ala Arg Tyr Leu Ala Arg Glu Phe Gly Phe Asn
 65 70 75 80
 Gly Lys Ser Arg Trp Glu Glu Ala Gln Val Asn Ser Leu Ala Asp Gln
 85 90 95
 Tyr Lys Asp Tyr Tyr Ala Glu Ala Arg Pro Tyr Leu Ala Val Lys Leu
 100 105 110
 Gly Tyr Thr Glu Gly Asp Ala Glu Ala Leu Tyr Thr Ser Val Tyr Leu
 115 120 125
 Pro Val Phe Lys Lys His Tyr Gly Phe Phe Val Asn Ala Leu Lys Ala
 130 135 140
 Ser Gly Ser Gly Phe Leu Val Gly Asn Ser Leu Thr Phe Ile Asp Leu
 145 150 155 160
 Leu Val Ala Gln His Ser Ala Asp Leu Leu Gly Arg Glu Lys Ser Asp
 165 170 175
 Leu Phe Asn Asp Val Pro Glu Met Lys Ala His Ser Glu Lys Val Gln
 180 185 190
 Ser Ile Pro Gln Ile Lys Lys Trp Ile Glu Thr Arg Pro Ala Ser Asp
 195 200 205
 Trp

<210> 30
 <211> 1137
 <212> DNA
 <213> *Caenorhabditis elegans*

<400> 30

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taaaaaattt atggtaaagt tttcagcagg atgtttctat agaagctttt tgcattgcaa 180
gagtgttgaa atatacagga tatttacaaa agcctgggaa gtaggcatgc ttttaggtac 240
aaatcagacc tacaccgcct tcctttgtgg tttacatca tagctaaaac tttccgaaca 300
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cttttattgt caaaaattac aaaagcgtcg ttttctggaa catgaacata ataagaattt 420
tcaaatttcg gtgggcacaa taaatatgta atcttttatt tatttttggg ggatagtctt 480
ttcaaaggca ggtgtataac cctcaaaaaga aagcacgttt gtgtttcaa gtgagactta 540
aattatttca aagacaaatt ccataggaaa tcattgttca tcaggcacct tcccagaaat 600
taggctgtag gcaggcacgt aggctgcggt aaatgcctac gcctcttttg cgcgagatta 660
tgaaattgtg ttgtactgtc ggaaaaattt cagaaacaaa aaaaaatatt ttttgtgact 720
ttttgtgtca gttatagtag tttcttatca tgggtatctt aataataatg gcaagcgtaa 780
caagatgatt gatgccatgg gtttatattt gtgagtagtc acaaattgtg acacaacatt 840
cccttcgaaa gatctggaaa agtcacaaaa ccttgcatat atttttttca accaatatta 900
ttttgaccta ctctgttcat cgtaacattg caacaacaaa aaacgatgac tacactttat 960
gatttctagt caacaacgtg cgcgcaatgt gtagagcaaa tgatgacaaa ctacagaata 1020
tggtgagtgg agagacgaca gacatttgag aaatgggtat aaatagagac ggccggcatt 1080
cagtgttcaa cccttctcat cgaccactcg atttcttgct tggttatttc aacaatg 1137

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<210> 31

<211> 665

<212> DNA

<213> *Caenorhabditis elegans*

<400> 31

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cgaccactcg atttcttgct tggttatttc aacaatggtc cactacaagg tatcgtactt 60
cccaattcgt ggagctggag agattgctcg tcagatcttg gcctacgctg gacaagactt 120
cgaggacaac agaatcccaa aggaggaatg gccagctgtc aagccaagca ctccattcgg 180
acagcttcca ctcttgaag ttgacggaaa ggttcttgcc caatctcatg ctatcgcccg 240
ttacttggct cgtcagttcg gaatcaatgg aaagtgtgca tgggaggagg ctcaagtcaa 300
ctcggttgct gatcaattca aggattacct caacgaagt cgtccatact tcatggtgaa 360
gatgggattt gctgaaggag atctcgatgc tcttgccaag gacgtcttcc ttccaggatt 420
caagaagcac tatggattct ttgctaactt cctcaagtcg gctggatccg gatacttggg 480
tggagactct ttgaccttgc tcgacttgct cgtcgctcag cacactgctg atcttctggc 540
tgccaacgca gctcttctcg atgaattccc acaattcaag gctcatcagg aaaagggttca 600
ctcgaatgcc aacatcaaga agtggttgga gactcgtcca gttactccat tctaaatgat 660
ttcca 665

```

<210> 32

<211> 206

<212> PRT

<213> *Caenorhabditis elegans*

<400> 32

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Met Val His Tyr Lys Val Ser Tyr Phe Pro Ile Arg Gly Ala Gly Glu
 1           5           10          15
Ile Ala Arg Gln Ile Leu Ala Tyr Ala Gly Gln Asp Phe Glu Asp Asn
          20          25          30
Arg Ile Pro Lys Glu Glu Trp Pro Ala Val Lys Pro Ser Thr Pro Phe
          35          40          45
Gly Gln Leu Pro Leu Leu Glu Val Asp Gly Lys Val Leu Ala Gln Ser
          50          55          60
His Ala Ile Ala Arg Tyr Leu Ala Arg Gln Phe Gly Ile Asn Gly Lys
65          70          75          80

```

Cys	Ala	Trp	Glu	Glu	Ala	Gln	Val	Asn	Ser	Val	Ala	Asp	Gln	Phe	Lys
			85					90					95		
Asp	Tyr	Leu	Asn	Glu	Val	Arg	Pro	Tyr	Phe	Met	Val	Lys	Met	Gly	Phe
			100					105					110		
Ala	Glu	Gly	Asp	Leu	Asp	Ala	Leu	Ala	Lys	Asp	Val	Phe	Leu	Pro	Gly
			115					120					125		
Phe	Lys	Lys	His	Tyr	Gly	Phe	Phe	Ala	Asn	Phe	Leu	Lys	Ser	Ala	Gly
			130					135					140		
Ser	Gly	Tyr	Leu	Val	Gly	Asp	Ser	Leu	Thr	Phe	Val	Asp	Leu	Leu	Val
			145			150				155					160
Ala	Gln	His	Thr	Ala	Asp	Leu	Leu	Ala	Ala	Asn	Ala	Ala	Leu	Leu	Asp
			165					170							175
Glu	Phe	Pro	Gln	Phe	Lys	Ala	His	Gln	Glu	Lys	Val	His	Ser	Asn	Ala
			180					185						190	
Asn	Ile	Lys	Lys	Trp	Leu	Glu	Thr	Arg	Pro	Val	Thr	Pro	Phe		
			195					200					205		

<210> 33
 <211> 420
 <212> DNA
 <213> *Caenorhabditis elegans*

<400> 33
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 aagttgtagc caagtttgat ccaactttat ccaatctttt actaaaatta tccttaagac 120
 tatttaaatt ttagatagag aattggcgag agtttagatcc cacttggata tgacttatag 180
 ttagcctaac ctgaagctat tgcttgcttg atcatttggg ttatcgcttt gctacttgga 240
 taaccagctc caatagtgtg ttttttggct tttgtcatca tttttccacg atttacactc 300
 tcaagtgaag ccaactgttc tttgatgcca gacgatgaca ttacacttga taagaaaata 360
 tatataaact ggaattaaaa acaattgata catcgattca attactgaat tctaattatg 420

<210> 34
 <211> 716
 <212> DNA
 <213> *Caenorhabditis elegans*

<400> 34
 atgccaaact ataagctatt gtattttgat gctcgtgctc ttgctgagcc aatccgtatc 60
 atgtttgcaa tgctcaatgt gccttacgag gattatagag tttcagtggg agaatgggtca 120
 aagctgaagc caacgactcc atttggccag cttcccattt tacaagtcga tggagaacaa 180
 ttcggtcagt caatgtctat cacaagatac ttggcaagaa aatttggact cgctggaaaa 240
 actgcagagg aagaagctta cgctgattca attgtagatc aatacagaga tttcatattc 300
 tttttccgtc aattcacttc ttccgttttc tatggaagtg acgctgatca tattaacaaa 360
 gtacgttttg aagttgttga accagcccgt gatgatttct tggcaataat caataagttc 420
 ctggccaaga gtaaatcagg attcctcggt ggagactcat tgacttgggc tgatattgtg 480
 attgctgaca atttgacaag tctcctgaag aatggattct tagatttcaa caaagaaaag 540
 aagttggaag agttctataa caagattcat tcaattccag aaattaagaa ttacgtggca 600
 acaagaaagg atagtattgt ttaaaatcga attatttaag tctgaattat gtatgtagta 660
 aaataatatc gttcctatca cgtctcccag agagcgtaat aaattattat tatgtg 716

<210> 35
 <211> 207
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 35

```

Met Pro Asn Tyr Lys Leu Leu Tyr Phe Asp Ala Arg Ala Leu Ala Glu
 1           5           10           15
Pro Ile Arg Ile Met Phe Ala Met Leu Asn Val Pro Tyr Glu Asp Tyr
          20           25           30
Arg Val Ser Val Glu Glu Trp Ser Lys Leu Lys Pro Thr Thr Pro Phe
          35           40           45
Gly Gln Leu Pro Ile Leu Gln Val Asp Gly Glu Gln Phe Gly Gln Ser
          50           55           60
Met Ser Ile Thr Arg Tyr Leu Ala Arg Lys Phe Gly Leu Ala Gly Lys
65           70           75           80
Thr Ala Glu Glu Glu Ala Tyr Ala Asp Ser Ile Val Asp Gln Tyr Arg
          85           90           95
Asp Phe Ile Phe Phe Phe Arg Gln Phe Thr Ser Ser Val Phe Tyr Gly
          100          105          110
Ser Asp Ala Asp His Ile Asn Lys Val Arg Phe Glu Val Val Glu Pro
          115          120          125
Ala Arg Asp Asp Phe Leu Ala Ile Ile Asn Lys Phe Leu Ala Lys Ser
          130          135          140
Lys Ser Gly Phe Leu Val Gly Asp Ser Leu Thr Trp Ala Asp Ile Val
145          150          155          160
Ile Ala Asp Asn Leu Thr Ser Leu Leu Lys Asn Gly Phe Leu Asp Phe
          165          170          175
Asn Lys Glu Lys Lys Leu Glu Glu Phe Tyr Asn Lys Ile His Ser Ile
          180          185          190
Pro Glu Ile Lys Asn Tyr Val Ala Thr Arg Lys Asp Ser Ile Val
          195          200          205

```

<210> 36

<211> 603

<212> DNA

<213> *Caenorhabditis elegans*

<400> 36

```

attccgcaac cccgtcaaat ttaagaagag aaagaaaaaa aacacaacgt gtttgcacct 60
gtaaggtagt ttttttttgt tgccttcggc gttttgattc acatgaaagt ttctacggaa 120
aaactttcat tgcataacga tcttcataatc ttgtttctgg aaacgaaaat ttccaacatg 180
aaagaaaccc gacgctattt attctcgcaa cacaaaaatt tcacatttaa ataaccgcgg 240
tttttctcga acagcatatt tgacgcgcat tgctcgtcaa gtttgatgcg tgcacactat 300
tttgctgttg ttttttctt ttttctctaa attttcttta cgctttcgta gtttctatag 360
aaacgattct ccaactcccgg ttttcttcgg attctcaaaa ttaattaaaa tttagttatt 420
aaaaatcctt tttcttgaaa taatcgttca atttcgagtt ttcaagagtg gagacgttga 480
atttgtagac cgcttatttt ttctgtgttt ttgttttgtg gtttttaatc agtgtcataa 540
tcatactttc cattgtttct ttattattca aagttgtaga ttcagtattt tagatcgggtg 600
atg                                                603

```

<210> 37

<211> 718

<212> DNA

<213> *Caenorhabditis elegans*

<400> 37

```

tttagatcgg tgatgtttat gaatcttctc actcaggtct ccaacgcgat ttttccgcag 60
gtcgaagccg ctcaaaaaat gtcgaaccgt gctgtcgtg ttcttcgtgg agaaactgtt 120
accggtacta tctggatcac acagaagtcc gaaaatgacc aggcagttat tgaaggagaa 180
atcaagggac ttactcccgg tcttcatgga ttccacgttc accaatatgg tgattccacc 240

```

```

aacggatgca tttctgccgg tccacacttc aatccatttg gaaagactca tggtaggacca 300
aaatccgaga tccgtcacgt aggcgatcta ggaaatgtgg aagctggagc cgatggagtg 360
gcaaaaatca agctcaccga cacgctcgtc acgctttacg gtccaaacac tgtcgttggc 420
cgatctatgg ttgttcatgc cggacaagac gacctcggcg agggagtcgg agacaaggca 480
gaagagtcca agaagactgg aaacgccgga gctcgtgctg cctgcggtgt cattgctctc 540
gctgctcccc agtgactacc tgaatcgcgt ctctgaatct ccacacaatt cctactaaag 600
acaatttttc atttcttget ttgtcgttat attcttaaga atcccgttgt tcctactcct 660
actactgtat attttcacat aaaattttctt caaaatttca aataaagggt gtagtttc 718

```

<210> 38

<211> 180

<212> PRT

<213> *Caenorhabditis elegans*

<400> 38

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Met Phe Met Asn Leu Leu Thr Gln Val Ser Asn Ala Ile Phe Pro Gln
 1           5           10           15
Val Glu Ala Ala Gln Lys Met Ser Asn Arg Ala Val Ala Val Leu Arg
          20           25           30
Gly Glu Thr Val Thr Gly Thr Ile Trp Ile Thr Gln Lys Ser Glu Asn
          35           40           45
Asp Gln Ala Val Ile Glu Gly Glu Ile Lys Gly Leu Thr Pro Gly Leu
          50           55           60
His Gly Phe His Val His Gln Tyr Gly Asp Ser Thr Asn Gly Cys Ile
65          70          75          80
Ser Ala Gly Pro His Phe Asn Pro Phe Gly Lys Thr His Gly Gly Pro
          85          90          95
Lys Ser Glu Ile Arg His Val Gly Asp Leu Gly Asn Val Glu Ala Gly
          100          105          110
Ala Asp Gly Val Ala Lys Ile Lys Leu Thr Asp Thr Leu Val Thr Leu
          115          120          125
Tyr Gly Pro Asn Thr Val Val Gly Arg Ser Met Val Val His Ala Gly
          130          135          140
Gln Asp Asp Leu Gly Glu Gly Val Gly Asp Lys Ala Glu Glu Ser Lys
145          150          155          160
Lys Thr Gly Asn Ala Gly Ala Arg Ala Ala Cys Gly Val Ile Ala Leu
          165          170          175
Ala Ala Pro Gln
          180

```

<210> 39

<211> 1577

<212> DNA

<213> *Caenorhabditis elegans*

<400> 39

```

tgaataaaaa cggtgaaccc aacggacatc aaagtatcaa agtaagtaag taagtaagta 60
acctgaataa aaacggttgca tataaaaaat ctactcgaaa attaagttag aattgaagga 120
ttgctttccg aagagaaaaat gacaattata ggggtatacta aaacatcaaa aatgtatatt 180
agactaccat aaatataaaa catcagtgct gctctccaag ctattctgac ggattgcgac 240
aacgagctcg ctggagttgg catcagtggt gaaggcagac acataagaag actcgaattt 300
gcggatgacg tagtcctgac atgttcacac ccgggagaag ttcaagaacg actggaaatt 360
ttggaccgaa taagtcttaa ttacggactc aagatcaatc agtcaaagac tgttcttctg 420
aagaacaagt tttgccggag ccaagacgtc cttttcaacg gatcccccat cattcccgtg 480
cctggttgcc gctatctggg tgcgtggatc gacatttctg gctcaattga cgaagagatc 540
tcgaggagaa taagagcagg ttgggggtgct ctggttggaa tcaaagaagt cttgagaatc 600

```

```

atgccaaaca aggaaagaat catcctcttc aagcaaaatg tgctaccagc tctcctgtat 660
gctagtgtaaa cttggacttg taatgctgga tccacgttga gactcaaaag aactgtcacc 720
gggtctcatcg acgctgcaga aattcgaggc tggaaacttca acttggaaacg ttacctcctt 780
gcaaaacaat caagatttgc aggacacatt ctacggagag atccaaaccg atggacaaaa 840
atctgcacgg aatgggaccc gagccacaac aaaaattgga aacgtgccgt tggaggacag 900
aagaagagat gggctaagga catcgacgaa gaatacgcga aattccacca caattccgcc 960
atgtcgggac aagtcgttgt tgggagaaga agactaggaa tgctcactcc gaaggctcca 1020
tggctgtcca tcgcacgaac cgaccgtgaa aaatggaaaag agtttgcctc cagttgcctc 1080
gcaacttgaa cccaacggac atcaaagtat caaagtaagt aagtaagtaa gtaacctgaa 1140
taaaaacgtt gcaattaaaa aatctactcg aaaattaagt gagaattgaa ggattgcttt 1200
ccgaagagaa aatgacaatt ataggggtata ctaaaacatc aaaaatgtat attagactac 1260
cataaatatt acgataattt aaaaattact agaaacacgc aattcggctc aaaaagcaac 1320
aatttagact gaaaacgagc taaaagaata ttattcaaaa accactttgc tcggtaaatc 1380
tgggtgtatca tgttccgcaa acactgtctt ttgttttgcg tactttgttt acgcgcattc 1440
gaatttcagt gttcgcgctt tttgtttact tttttatatt tcatccaaaa atcgtatttt 1500
cagcttgata tgtttctgcg aattgtaaaa atttatattt gactattgaa tattttaatt 1560
atttcagcc gaaaatg                                     1577

```

<210> 40

<211> 813

<212> DNA

<213> *Caenorhabditis elegans*

<400> 40

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tttgcagccg aaaatgcttc aaaacaccgt tcgctgtgtc tcaaagcttg ttcaaccgat 60
cacaggagtc gctgctgttc gtcgaagca ctgctgccca gatttaccat acgactatgc 120
tgatttggag cctgtaatca gtcacgagat tatgcaactt catcatcaaa agcatcatgc 180
cacttatgtg aacaatctca accaaattga ggaaaagctt cacgaggcgg tctccaaagg 240
aaacgtcaaa gaagctatcg ctcttcagcc agctctcaag ttcaatggag gaggacatat 300
caaccactcc atcttctgga ctaatttggc aaaggacgga ggagaaccat cggcggagtt 360
gctcacgcga attaagagcg acttcggatc tctggataat cttcaaaaac agctttcggc 420
atcaactgtc gctgttcaag gatcaggatg gggatggttg ggatactgtc caaagggaaa 480
gatcttgaag gttgccacat gtgccaatca ggatccactt gaggcaacaa ctggacttgt 540
tccactgttc ggaattgacg tctgggagca cgcttactac ttgcagtaca agaatgttcg 600
accagattat gtcaatgcta tttggaagat cgccaactgg aagaacgtca gcgagcgttt 660
tgcaaaggca cagcaataaa tgagctgaat cacaagaatt aatcgtcaaa tgtagcagta 720
gaagttgact ccattgttt tgtaactatt tttgtttctt aattatttcg aaatgtaaat 780
tttcaaacct tttcaaatga aaagttttca ccg                                     813

```

<210> 41

<211> 221

<212> PRT

<213> *Caenorhabditis elegans*

<400> 41

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Met Leu Gln Asn Thr Val Arg Cys Val Ser Lys Leu Val Gln Pro Ile
 1              5              10              15
Thr Gly Val Ala Ala Val Arg Ser Lys His Ser Leu Pro Asp Leu Pro
              20              25              30
Tyr Asp Tyr Ala Asp Leu Glu Pro Val Ile Ser His Glu Ile Met Gln
              35              40              45
Leu His His Gln Lys His His Ala Thr Tyr Val Asn Asn Leu Asn Gln
              50              55              60
Ile Glu Glu Lys Leu His Glu Ala Val Ser Lys Gly Asn Val Lys Glu
65              70              75              80
Ala Ile Ala Leu Gln Pro Ala Leu Lys Phe Asn Gly Gly Gly His Ile
              85              90              95

```

Asn	His	Ser	Ile	Phe	Trp	Thr	Asn	Leu	Ala	Lys	Asp	Gly	Gly	Glu	Pro
			100					105					110		
Ser	Ala	Glu	Leu	Leu	Thr	Ala	Ile	Lys	Ser	Asp	Phe	Gly	Ser	Leu	Asp
		115					120					125			
Asn	Leu	Gln	Lys	Gln	Leu	Ser	Ala	Ser	Thr	Val	Ala	Val	Gln	Gly	Ser
		130				135					140				
Gly	Trp	Gly	Trp	Leu	Gly	Tyr	Cys	Pro	Lys	Gly	Lys	Ile	Leu	Lys	Val
145					150					155					160
Ala	Thr	Cys	Ala	Asn	Gln	Asp	Pro	Leu	Glu	Ala	Thr	Thr	Gly	Leu	Val
			165						170					175	
Pro	Leu	Phe	Gly	Ile	Asp	Val	Trp	Glu	His	Ala	Tyr	Tyr	Leu	Gln	Tyr
		180						185					190		
Lys	Asn	Val	Arg	Pro	Asp	Tyr	Val	Asn	Ala	Ile	Trp	Lys	Ile	Ala	Asn
		195					200					205			
Trp	Lys	Asn	Val	Ser	Glu	Arg	Phe	Ala	Lys	Ala	Gln	Gln			
		210					215					220			

<210> 42

<211> 1162

<212> DNA

<213> *Caenorhabditis elegans*

<400> 42

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aaaaaaaaat cgataaaaaa tccgcgtcaa cgaaagttaa aagttacagt atttgctggt 60
tcgagaccgg gtaccgtagt ttttggtgaa aacattgcaa aatttggtca acaatttcat 120
cgctgcgaga ccgacacaac actttatattt atttttgggt ttcccttata gcttatcata 180
aacatgtgac gtcacatcat cttgtacaga gcaccgcgac tgggagtata agaatcgccg 240
gaaaacatca ataatacagtt cggtagaagt gaaaattgag cgtaaaatat gatcattttt 300
cgatgcacca tatttgacgc gcaataacttc tacaagccgc tgtgtactgc tcgtggacaa 360
ctttggatta ttttttggtt ttaaaattca aaatagtcaa tatattgctt atttatagcg 420
cgcttttttg acagtaagtt tgtcaaattt gcgcgtaagt tatgggtgtt gcacatatgc 480
accatacagc aacaccccg cggccgggcta gtggtacatc catgcaaagt cgctctactg 540
ataatttgag tttaaccagg tttaggcgca agataagaaa aaagctttgg accaaaaaat 600
ttagagttta tttttttcgg acatttttta tatacatcac aaaaatattg ggccactcgt 660
ttttgataaa aacgacaagc ccaaaagttc aggtatacgg tagacaaatt gcgtacaggt 720
accacttttc cacgtagtgc caggttgccc cattacgctt tgatctatga aaaatgcggg 780
aatttttcgt ccagaaaaat gtgacgtcag cacgttctca accatgcgaa atcagttgaa 840
aactctgcgt ctattctccc gcattttttg tagatctgta gatttgtaga tcaatccatt 900
ccccgtatac cctgacccat aatcaatacc tacctaattt ttgtctttcc ccctactttt 960
ttgcctgtcc aaaataagcg agactatgcc gtagtctggg gtccaacaac atgttcctta 1020
tcagtataaa cgctacaatc ttctttcttt tttctctggt tctcttgtct ctcccaacct 1080
atattccgta ttacacctcg tcgtgggtcat ttttttgttc agagttttat ttaattctaa 1140
atttcctaac taaaatttca ga

```

1162

<210> 43

<211> 1500

<212> DNA

<213> *Caenorhabditis elegans*

<400> 43

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aaaatgccaa acgatccatc ggataatcaa ctgaaaacct acaaggagac gtatccaaaa 60
ccccagtga tcacaacttc aaatggagct ccgatctact cgaagaccgc cgtgctcacc 120
gccggggcgc gtggcccaat gtcacatgca gatgtagttt atatggatga gatggctcat 180
ttcgatcgtg aacgtatccc cgagcgtgtc gttcatgcca agggagccgg agcccatgga 240
tacttcgagg tcacccatga catcaccaag tactgtaagg ccgatatgtt caacaaggtc 300
ggaaaacaga caccacttct cgttcgtttt tcaacggtcg ctggagaatc gggatccgct 360

```

```

gatactgtcc gcgatccacg tggattctct ctcaaattct ataccgagga gggtaactgg 420
gatctgggtg gaaataaacac tccgatcttc ttcattcgtg acgcaatcca ctttccgaat 480
ttcattcatg ccctgaagcg caatccacag actcacatga gggatccgaa tgcgctcttc 540
gatttctgga tgaatcgccc tgaatccatt catcaggtga tgttcctcta ctcggtcgt 600
ggaatttctg atggattccg ttttatgaat ggatacggag cgcatacttt caagatggtc 660
aacaaggagg gaaatccgat ttattgtaaa ttccatttca agcctgctca aggttccaag 720
aatctcgatc caactgacgc tggaaagctc gcctcttcgg atccagacta tgcgatccgc 780
gacctgttca atgccattga gtcaagaaat ttcccggaaat ggaagatgtt cattcaagt 840
atgacattcg aacaagctga gaaatgggag ttcaatccat ttgatgtcac taaagtttgg 900
ccacacggtg attaccctact gatcgaggtc ggcaagatgg tgctgaacag gaatgtgaag 960
aattatttcg ctgaggtcga acaagccgcc ttctgcccgg cccacatcgt cccaggaatc 1020
gagttctcgc cagacaagat gctccaagg gctatcttct cctacacgga cacgcattac 1080
catcgcttgc gaccaaacta cattcagctt ccagtcaact gcccgtaccg ctcccgtgct 1140
cataccactc aacgcgatgg tgcaatggct tatgaaagcc agggagatgc gccgaattac 1200
ttcccgaaca gtttccgcgg ataccgtact cgtgatgatg tgaaggagtc gacatttcag 1260
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cagttctggg agaaagtgtc caaggaggag gagagagatc ggctcgttgg gaatttggct 1380
agtgatgttg gtggctgttt ggaggaaatt caaaatggaa tggcacaaga gttcacgaaa 1440
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```

<210> 44

<211> 497

<212> PRT

<213> *Caenorhabditis elegans*

<400> 44

```

Met Pro Asn Asp Pro Ser Asp Asn Gln Leu Lys Thr Tyr Lys Glu Thr
 1                    5                10              15
Tyr Pro Lys Pro Gln Val Ile Thr Thr Ser Asn Gly Ala Pro Ile Tyr
                20                25              30
Ser Lys Thr Ala Val Leu Thr Ala Gly Arg Arg Gly Pro Met Leu Met
                35                40              45
Gln Asp Val Val Tyr Met Asp Glu Met Ala His Phe Asp Arg Glu Arg
                50                55              60
Ile Pro Glu Arg Val Val His Ala Lys Gly Ala Gly Ala His Gly Tyr
65                70                75              80
Phe Glu Val Thr His Asp Ile Thr Lys Tyr Cys Lys Ala Asp Met Phe
                85                90              95
Asn Lys Val Gly Lys Gln Thr Pro Leu Leu Val Arg Phe Ser Thr Val
                100               105              110
Ala Gly Glu Ser Gly Ser Ala Asp Thr Val Arg Asp Pro Arg Gly Phe
                115               120              125
Ser Leu Lys Phe Tyr Thr Glu Gly Asn Trp Asp Leu Val Gly Asn
                130               135              140
Asn Thr Pro Ile Phe Phe Ile Arg Asp Ala Ile His Phe Pro Asn Phe
145                150                155              160
Ile His Ala Leu Lys Arg Asn Pro Gln Thr His Met Arg Asp Pro Asn
                165                170              175
Ala Leu Phe Asp Phe Trp Met Asn Arg Pro Glu Ser Ile His Gln Val
                180                185              190
Met Phe Leu Tyr Ser Asp Arg Gly Ile Pro Asp Gly Phe Arg Phe Met
                195                200              205
Asn Gly Tyr Gly Ala His Thr Phe Lys Met Val Asn Lys Glu Gly Asn
                210                215              220
Pro Ile Tyr Cys Lys Phe His Phe Lys Pro Ala Gln Gly Ser Lys Asn
225                230                235              240

```

Leu Asp Pro Thr Asp Ala Gly Lys Leu Ala Ser Ser Asp Pro Asp Tyr
 245 250 255
 Ala Ile Arg Asp Leu Phe Asn Ala Ile Glu Ser Arg Asn Phe Pro Glu
 260 265 270
 Trp Lys Met Phe Ile Gln Val Met Thr Phe Glu Gln Ala Glu Lys Trp
 275 280 285
 Glu Phe Asn Pro Phe Asp Val Thr Lys Val Trp Pro His Gly Asp Tyr
 290 295 300
 Pro Leu Ile Glu Val Gly Lys Met Val Leu Asn Arg Asn Val Lys Asn
 305 310 315 320
 Tyr Phe Ala Glu Val Glu Gln Ala Ala Phe Cys Pro Ala His Ile Val
 325 330 335
 Pro Gly Ile Glu Phe Ser Pro Asp Lys Met Leu Gln Gly Arg Ile Phe
 340 345 350
 Ser Tyr Thr Asp Thr His Tyr His Arg Leu Gly Pro Asn Tyr Ile Gln
 355 360 365
 Leu Pro Val Asn Cys Pro Tyr Arg Ser Arg Ala His Thr Thr Gln Arg
 370 375 380
 Asp Gly Ala Met Ala Tyr Glu Ser Gln Gly Asp Ala Pro Asn Tyr Phe
 385 390 395 400
 Pro Asn Ser Phe Arg Gly Tyr Arg Thr Arg Asp Asp Val Lys Glu Ser
 405 410 415
 Thr Phe Gln Thr Thr Gly Asp Val Asp Arg Tyr Glu Thr Gly Asp Asp
 420 425 430
 His Asn Tyr Glu Gln Pro Arg Gln Phe Trp Glu Lys Val Leu Lys Glu
 435 440 445
 Glu Glu Arg Asp Arg Leu Val Gly Asn Leu Ala Ser Asp Leu Gly Gly
 450 455 460
 Cys Leu Glu Glu Ile Gln Asn Gly Met Val Lys Glu Phe Thr Lys Val
 465 470 475 480
 His Pro Asp Phe Gly Asn Ala Leu Arg His Gln Leu Cys Gln Lys Lys
 485 490 495
 His

<210> 45

<211> 1062

<212> DNA

<213> *Caenorhabditis elegans*

<400> 45

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<210> 46

<211> 815

<212> DNA

<213> *Caenorhabditis elegans*

<400> 46

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<210> 47

<211> 218

<212> PRT

<213> *Caenorhabditis elegans*

<400> 47

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			20					25					30		
Phe	Asp	Tyr	Ala	Asp	Leu	Glu	Pro	Val	Ile	Ser	His	Glu	Ile	Met	Gln
			35					40					45		
Leu	His	His	Gln	Lys	His	His	Ala	Thr	Tyr	Val	Asn	Asn	Leu	Asn	Gln
			50				55				60				
Ile	Glu	Glu	Lys	Leu	His	Glu	Ala	Val	Ser	Lys	Gly	Asn	Leu	Lys	Glu
65						70				75				80	
Ala	Ile	Ala	Leu	Gln	Pro	Ala	Leu	Lys	Phe	Asn	Gly	Gly	Gly	His	Ile
			85					90						95	
Asn	His	Ser	Ile	Phe	Trp	Thr	Asn	Leu	Ala	Lys	Asp	Gly	Gly	Glu	Pro
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Ser	Lys	Glu	Leu	Met	Asp	Thr	Ile	Lys	Arg	Asp	Phe	Gly	Ser	Leu	Asp
			115				120					125			
Asn	Leu	Gln	Lys	Arg	Leu	Ser	Asp	Ile	Thr	Ile	Ala	Val	Gln	Gly	Ser
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Gly	Ile	Asp	Val	Trp	Glu	His	Ala	Tyr	Tyr	Leu	Gln	Tyr	Lys	Asn	Val
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Arg	Pro	Asp	Tyr	Val	His	Ala	Ile	Trp	Lys	Ile	Ala	Asn	Trp	Lys	Asn
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Ile Ser Glu Arg Phe Ala Asn Ala Arg Gln
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<211> 851
<212> DNA
<213> *Caenorhabditis elegans*

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tatcaaactt ttatcgtctg ttcatctctt ctgacaatct ttattatctt attaaacttg 480
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atatcacttt atcatcatga gatttaattg ttccctttga ttttctgaat tgttgacttt 780
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<210> 49
<211> 2297
<212> DNA
<213> *Caenorhabditis elegans*

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<210> 50

<211> 654

<212> PRT

<213> *Caenorhabditis elegans*

<400> 50

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 20           25           30
Leu Tyr His Arg Leu Lys Ser Arg His Gly Asp Gln Leu Lys Trp Gly
 35           40           45
Asp Glu Ile Glu Tyr Thr Ile Val Lys Phe Asp Asp Ala Asn Lys Lys
 50           55           60
Val Arg Val Ser Cys Lys Ala Glu Glu Leu Leu Asn Lys Leu Gln Ala
 65           70           75           80
Glu Glu Gln Val Asn Ala Met Leu Gly Thr Ala Asn Arg Phe Leu Trp
 85           90           95
Arg Pro Glu Phe Gly Ser Tyr Met Ile Glu Gly Thr Pro Gly Met Pro
100          105          110
Tyr Gly Gly Leu Ile Ala Cys Phe Asn Ile Val Glu Ala Asn Met Lys
115          120          125
Leu Arg Arg Gln Val Val Lys Lys Leu Leu Lys Lys Asp Glu Thr Cys
130          135          140
Leu Ser Ile Ser Phe Pro Ser Leu Gly Val Pro Gly Phe Thr Phe Pro
145          150          155          160
Glu Val Ala Ala Asp Arg Lys Asn Asp Asp Ala Ala Asn Ser Val Phe
165          170          175
Trp Pro Glu Gln Ala Val Phe Leu Gly His Pro Arg Phe Lys Asn Leu
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Thr Lys Asn Ile Lys Gly Arg Arg Gly Ser Lys Val Ala Ile Asn Val
195          200          205
Pro Ile Phe Lys Asp Thr Asn Thr Pro Ser Pro Phe Val Glu Asp Leu
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Ser Ala Leu Gly Gly Pro Asp Asp Thr Arg Asp Ala Lys Pro Asp His
225          230          235          240
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245          250          255
Val Thr Phe Gln Ala Val Asn Val Asp Glu Ala Arg Trp Leu Tyr Asp
260          265          270
Gln Leu Thr Pro Ile Thr Pro Ile Leu Leu Ala Leu Ser Ala Ala Thr
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 Thr Asp Cys Tyr Ile Tyr Pro Cys Ser Val Gly Tyr Asn Asp Ile Pro
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 His Gln Val Phe Arg Glu Arg Ile Glu Gln Asp Asp Glu Lys Ser Ser
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 Lys Pro Pro Pro Pro Asp Ala Pro Glu Ile Gly Trp Arg Val Glu Phe
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 Arg Pro Thr Glu Val Gln Leu Thr Asp Phe Glu Asn Ala Ala Tyr Cys
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 Gln Lys Asp Ala Val Leu Asn Gln Lys Phe Leu Phe Arg Lys Gly Leu
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 His Asp Ser Asp Val Asn Asp Asn Ile Val Tyr Asp Leu Leu Lys Lys
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<212> PRT

<213> Caenorhabditis elegans

<400> 51

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 <213> Caenorhabditis elegans

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<210> 56

<211> 45

<212> DNA

<213> *Caenorhabditis elegans*

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<210> 57

<211> 45

<212> DNA

<213> *Caenorhabditis elegans*

<400> 57

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45